

## **REMARKS**

Claims 7-14, 16-26, and 29-32 were pending in this application. Applicant has amended claims 7, 8, 12, 21, 29, and 30 and canceled claims 11 and 23. Support for the claim amendments can be found in Applicant's disclosure, specifically at page 12, lines 15-20 and 22-25; page 7, second paragraph, page 9, last paragraph, page 10, lines 11-12, page 11, first paragraph, page 15, page 16, last paragraph, page 18. Reconsideration of the rejections is requested.

## **CLAIM REJECTIONS UNDER 35 USC §103**

In the Office Action, the Examiner rejected claims 7-14, 16-26, and 29-32 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,857,179, issued to Vaithyanathan (hereafter "Vaithyanathan") in view of over U.S. Patent No. 6,006,221, issued to Liddy (hereafter "Liddy").

In the Office Action at page 5, the Examiner states that "Vaithyanathan does not expressly disclose "searching for unique concepts, a unique concept being a concept whose statistical characteristic is distinguished beyond a threshold with the set to which it belongs; creating and keeping statistical information; visually displaying the statistical information; and presenting a distribution of differences of the unique concepts." The Examiner contends that these deficiencies in Vaithyanathan are addressed by Liddy. Applicant respectfully traverses these findings. Liddy does not teach or suggest "keeping statistical information; visually displaying the statistical information; and presenting a distribution of differences of the unique

concepts.” Rather, Liddy presents the user with a selection of foreign language documents, along with a summary of each document, and the user selects the information he/she finds most relevant. In Liddy, “The user is able to browse the documents, freely moving from cluster to cluster with the ability to view the full documents in addition to their summary representation. The user is able to indicate those documents deemed most relevant by highlighting document titles or summaries.” Since Liddy is providing multilingual document retrieval in response to a user query, there is no reason for Liddy to generate or keep statistical information. This is in contrast to the claimed subject matter of automatically mining data to extract relevant context in order to provide on-going information for statistical analysis.

Applicant submits that the deficiencies in Vaithyanathan are not limited to those pointed out by the Examiner. Vaithyanathan’s method for clustering documents produces a cluster summary indicative of the documents in that cluster (see Abstract) in response to a key word query for document retrieval (see claim 10). Vaithyanathan is limited to categorizing documents “within a predefined domain” (col. 2, lines 22-23) and Liddy relies on user input to find the relevant concepts. This differs from the elements of claim 7, as amended. The combination of Vaithyanathan and Liddy does not teach or suggest:

“converting the collection of data into labeled data by grouping various types of data into a same format and assigning a label indicating a category of item contents, such that the labeled data is in analyzable condition for concept extraction, and wherein the labeled data comprises the label and a clause comprising the item contents; [support for claim amendment at p. 10]

assigning a category to the key words, wherein the category references a concept so that the

key words can be handled as concepts with a meaning; [support for claim amendment at p. 11, last paragraph]

separating the clauses into pairs comprising an independent word and an attached word; [support for claim amendment at p. 16]

assigning categories to the separated clauses using syntactic patterns and a category dictionary; [support for claim amendment at p. 12, and p. 15]

generating, by syntactic analysis, a syntactic tree of a sentence comprising the separated clauses; [support for claim amendment at p. 12, 2<sup>nd</sup> para, p. 16, last paragraph, p. 17]

receiving a syntactically analyzed sentence as input, identifying mutually dependent relationships between or among the categorized key words, according to at least one rule defining mutually dependent relationships between or among categorized key words; [support for claim amendment at p.18]

grouping the identified mutually dependent relationships into groups of related mutually dependent relationships; and

extracting the key words with mutually dependent relationships in the same sentence as labeled data with concepts, wherein the step of extracting key words comprises using a mutually dependent relationship extraction rule comprising a string of categories of arbitrary length to be extracted;”

Vaithyanathan provides query results consisting of a number of documents, in response to a user request. Vaithyanathan’s clusters are clusters of documents and Vaithyanathan categorizes the clusters of documents by type of document. In Vaithyanathan, documents are weighted according to how relevant they are to the user’s query. Col. 10, lines 36 : “The distance indicator 108A-111A represents the vector distance from the centroid of that particular cluster centroid. For example, a distance of 0.11 108A is closer to the centroid than a distance of 0.20 111A and therefore, the document corresponding to the centroid distance of 0.11 is

probably more relevant to the query than the later document.”

Liddy: Col. 6, lines 48 - : “Processing of documents and queries follows a modular progression, with documents being matched to queries based on matching (1) their conceptual-level contents, and (2) various term-based and logic representations such as the frequency/co-occurrence of proper nouns.”

Claims 8-20 depend on claim 7, and are patentable for at least the reasons discussed above.

Claim 21 has been amended to track the language of claim 7 and it and its dependent claims are also patentable for the foregoing reasons.

For the foregoing reasons, Applicant respectfully requests reconsideration and allowance of the pending claims.

Respectfully submitted,

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